

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II**

DATE: MAY 21 2012

SUBJECT: Action Memorandum/Enforcement: Determination of Need to Conduct a CERCLA Time-Critical Removal Action at the Diamond Alkali Superfund Site, Lower Passaic River Study Area, River Mile 10.9 Removal Area, Lyndhurst, New Jersey

FROM: Raymond Basso, Director
Lower Passaic River Project 

TO: Walter E. Mugdan, Director
Emergency and Remedial Response Division

I. PURPOSE

The purpose of this Action Memorandum is to document the determination of the need to conduct a time-critical removal action within an approximately five-acre area in the Lower Passaic River Study Area (LPRSA) at River Mile (RM) 10.9 in Lyndhurst, New Jersey. Figure 1 shows the areal extent of what will be referred to herein as the RM 10.9 Removal Area. EPA anticipates that this removal action will be performed by potentially responsible parties pursuant to an administrative settlement agreement and order on consent.

The removal action will result in the removal of the surface portion of the sediments containing significantly elevated concentrations of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (collectively, PCDDs/PCDFs), polychlorinated biphenyls (PCBs), mercury, polycyclic aromatic hydrocarbons (PAHs) and other hazardous substances, which if released, could adversely impact nearby human populations, animals, and the food chain, and capping of the underlying sediments. The peak concentrations detected in the top six inches of sediment include 2,3,7,8-TCDD at 21.6 parts per billion (ppb), PCBs at 34 parts per million (ppm), mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. These maxima are among the highest concentrations found in the surface sediments of the LPRSA.

Conditions at the RM 10.9 Removal Area meet the criteria for a removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300.

The removal action will mitigate threats to the public health, welfare and the environment posed by the presence of the high levels of contaminants in the surface sediments in the RM 10.9 Removal Area. Since the high levels of the aforementioned contaminants present in the top six inches of sediment are currently bio-available and subject to migration or release due to weather and/or hydrologic conditions, this response will be conducted as a time-critical removal action.

The Environmental Protection Agency (EPA) Region 2 conducted briefings on the proposed removal action for citizens and local officials at public availability sessions in the Town of Lyndhurst and Citizen Advisory Group meetings in Newark, New Jersey. Coordination and consultation with local officials and the public will continue throughout the design and construction phase of the project.

The New Jersey Department of Environmental Protection (NJDEP) was involved in developing the technical scope of the project and agrees with the proposed removal action for this Site.

II. SITE CONDITIONS AND BACKGROUND

This Action Memorandum documents the proposed time-critical removal action for the Site. The Comprehensive Environmental Response, Compensation and Liability Information System ID number for the Diamond Alkali Site, of which RM 10.9 Removal Area is a part, is NJD980528996.

A. Site Description

1. Removal Site Evaluation

The Diamond Alkali Superfund Site includes the former Diamond Alkali facility located at 80 and 120 Lister Avenue in Newark, New Jersey, the LPRSA, and the Newark Bay Study Area. The LPRSA is the 17-mile, tidal portion of the Passaic River, from the Dundee Dam near Garfield, New Jersey to Newark Bay and includes the RM 10.9 Removal Area. The LPRSA is a facility as defined by Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9). The contamination found at the RM 10.9 Removal Area includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a).

The conditions in the sediments at the RM 10.9 Removal Area meet a number of the specific factors identified in 40 CFR Part 300.415(b)(2) for EPA to consider in determining the appropriateness of a removal action, including, but not limited to:

1. an actual or potential release of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, exposing nearby human populations, animals or the food chain (40 CFR §300.415(b)(2)(i));
2. actual or potential contamination of sensitive ecosystems due to the presence of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs (40 CFR §300.415(b)(2)(ii)); and
3. high levels of hazardous substances, including PCDDs/PCDFs, PCBs, mercury and PAHs, present at or near the surface of the sediment that could migrate or be released due to weather and/or hydrologic conditions (40 CFR §300.415(b)(2)(iv)-(v)).

2. Physical location

The RM 10.9 Removal Area is an approximately five-acre area located on the eastern side of the LPRSA within a larger area (the RM 10.9 Study Area) that extends approximately 2,380 feet from RM 10.65 to RM 11.1, along an inside bend of the river upstream of the Delesse-Avondale Street Bridge, and that includes the mudflat and point bar in the eastern half of the river channel. It is bounded to the west by the navigation channel of the Passaic River and to the east by the Riverside Park complex, which is owned and operated by Bergen County and the Town of Lyndhurst. The RM 10.9 Removal Area dimensions were determined based on a review of sediment data collected at 54 locations within the RM 10.9 Study Area (Figure 2), and will be further refined during a pre-design investigation.

The area surrounding the RM 10.9 Removal Area consists predominately of recreational facilities such as parkland and numerous ball fields. A number of public boat launches are also located in the vicinity and use of the river for recreational boating is ongoing and significant.

3. Site characteristics

In 2004, EPA commenced a remedial investigation and feasibility study (RI/FS) of the 17-mile LPRSA, funded by a group of potentially responsible parties known as the Lower Passaic River Cooperating Parties Group (CPG) under a Settlement Agreement pursuant to CERCLA Section 122(h), 42 U.S.C. § 9622(h). The RI/FS represented EPA's portion of work being undertaken by a partnership of federal and State of New Jersey agencies under CERCLA and the federal Water Resources Development Act (WRDA). In May 2007, EPA entered into another settlement agreement with the CPG, under which the CPG agreed to complete the RI/FS for the LPRSA (the RI/FS Agreement). The RI/FS is proceeding under the direction and oversight of EPA.

Sediment samples collected in the RM 10.9 Study Area as part of the RI/FS suggested that significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other contaminants might be present in this area. In April 2011, the CPG proposed and EPA agreed that the CPG would undertake additional sampling and analysis, and perform bathymetry and hydrodynamic survey work, to characterize and develop information about the extent of contamination in the RM 10.9 Study Area. The data from the samples collected by the CPG confirmed that portions of the sediment located in the RM 10.9 Study Area, which includes a mudflat on the eastern shore of the Passaic River that is exposed at low tide, contains significantly elevated concentrations of PCDDs/PCDFs, PCBs, mercury, PAHs and other hazardous substances. In the first six inches of sediment, peak concentrations detected include 2,3,7,8-TCDD at 21.6 ppb, PCBs at 34 ppm, mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. These maxima are among the highest found in the LPRSA. Elevated concentrations of PCDDs/PCDFs, PCBs and mercury are generally co-located in surface and subsurface sediments.

Riverside County Park, which is owned by Bergen County, is located on the eastern shore of the River adjacent to the RM 10.9 Removal Area. Immediately adjacent to the north end of Riverside County Park are baseball fields owned by the Town of Lyndhurst that are adjacent to the RM 10.9 Removal Area as well. Individuals utilizing the River, including boaters, waders

and anglers, could be exposed to the sediments. The sediment at the surface of the RM 10.9 Removal Area also acts as a low-level, ongoing source of contamination to other parts of the river through erosion, and may act as a significant, event-driven source of contamination during high-flow events, when elevated shear stresses created by higher flows could lead to significant erosion.

EPA conducted additional soil sampling in the parks located adjacent to the RM 10.9 Study Area. Concentrations detected in the parks were below levels of concern and no additional action is contemplated at this time.

4. Release or threatened release into the environment of a hazardous substance, or pollutant, or contaminant

The sediments of the LPRSA contain concentrations of numerous hazardous substances, including, but not limited to PCDDs/PCDFs, PCBs, PAHs, dichlorodiphenyl-trichloroethate (DDT), dieldrin, chlordane, mercury, cadmium, copper, and lead. The discovery of widespread contamination in the LPRSA and Newark Bay led the State of New Jersey to issue a number of fish consumption advisories in 1983 and 1984, which prohibited the sale or consumption of all fish, shellfish, and crustaceans from the LPRSA. These State fish advisories and prohibitions are still in effect.

The chemical data from the investigation of the RM 10.9 Removal Area indicate some of the highest contaminant levels reported within the biologically active zone in the entire LPRSA. These sediments pose a serious threat, because surface sediment contaminant concentrations are among the highest found in the LPRSA and they exceed the levels that can produce toxic effects to human health and biota.

The contamination found at the RM 10.9 Removal Area includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a). The above data are only a summary of the more pertinent analytical information. The remainder of the analytical data is available in the Administrative Record for this removal action.

5. NPL status

EPA placed the Diamond Alkali Superfund Site on the National Priorities List (NPL) by publication in the Federal Register on September 21, 1984. 49 Fed. Reg. 37070. The Site includes the former pesticides manufacturing facility located at 80 Lister Avenue and surrounding property located at 120 Lister Avenue in Newark, New Jersey (known as Operable Unit 1 or "OU1"), the LPRSA, which is defined as the 17-mile stretch of the Lower Passaic River from Dundee Dam to Newark Bay, the Newark Bay Study Area, consisting of Newark Bay and portions of the Hackensack River, Arthur Kill and Kill van Kull, and the areal extent of contamination.

6. Maps, pictures, and other graphic representation

Attached to this memorandum are figures depicting:

- the extent of the RM 10.9 Removal Area
- the sampling that was conducted in the RM 10.9 Study Area and on the adjacent parks,
- the concentrations of 2,3,7,8-TCDD, PCBs, and mercury detected in the surface sediment of the RM 10.9 Study Area.

B. Other Actions to Date

1. Previous actions

In the mid-1980s, in response to the releases of hazardous substances at the former Diamond Alkali facility, the Diamond Shamrock Chemicals Company (Diamond) entered into two separate administrative consent orders with NJDEP to conduct a RI/FS for 80 and 120 Lister Avenue. Since the Lister Avenue properties are adjacent to the Passaic River, the remedial investigation included the sampling and assessment of sediment contamination in the Passaic River. Sampling and assessment of the Passaic River conducted by Diamond in 1984-1986 indicated that contaminants from OU1, including 2,3,7,8-TCDD, DDT, 2,4-dichlorophenoxyacetic acid, 2,4,5-trichlorophenoxyacetic acid and 2,4,5-trichlorophenol had migrated into the Lower Passaic River Study Area. Further, sampling has shown that the LPRSA is contaminated with many other hazardous substances, including, but not limited to, cadmium, copper, lead, mercury, nickel, zinc, PAHs, and PCBs.

During the 1980s, removal activities were performed by NJDEP, EPA and Diamond. These removal activities included the excavation of soils contaminated with hazardous substances, and placement of a geotextile fabric on 80 Lister Avenue. Hazardous substances were vacuumed from the streets in the vicinity of 80 Lister Avenue. The soils and debris vacuumed from the streets, along with excavated soils that were also contaminated with hazardous substances, were later secured on the 120 Lister Avenue property. The removal activities were completed in 1986.

Based on the results of the RI/FS, EPA issued a Record of Decision (ROD) on September 30, 1987. The ROD selected an interim remedial action plan for cleanup of OU1, consisting of (1) construction of a slurry wall and flood wall around the properties, (2) installation of a cap over the properties, and (3) the pumping and treatment of groundwater to reduce the migration of contaminated groundwater to the river. On October 20, 1988, EPA issued a notice letter to Occidental Chemical Corporation (OCC) regarding its liability for the Site. Pursuant to a judicial Consent Decree with EPA entered by the Court in 1990, OCC and Chemical Land Holdings, Inc. (now known as Tierra Solutions, Inc. (TSI) agreed to implement the ROD for OU1. Remedial construction has been completed and groundwater treatment is ongoing. Under the Consent Decree, re-evaluations of the OU1 remedy will be performed every two years, subsequent to approval of the construction completion, to determine if a more protective remedy can be implemented.

On April 20, 1994, OCC and EPA entered into AOC, Index No. II-CERCLA-0117, pursuant to which OCC agreed to perform a RI/FS with respect to a six-mile portion of the Passaic River from an abandoned ConRail Railroad bridge at the downriver boundary located at the U.S. Army Corps of Engineers (USACE) station designation of 40+00 to a transect six miles upriver located at the USACE station designation of 356+80. The sampling results from the investigation in the six mile area and other environmental studies demonstrated that evaluation of a larger area was necessary, in that sediments contaminated with hazardous substances and other potential sources of hazardous substances are present along at least the entire LPRSA. Furthermore, the tidal nature of the Lower Passaic River has resulted in greater dispersion of hazardous substances than originally expected, thus promoting the distribution of hazardous substances into and out of the six mile stretch of the Passaic River. In January 2001, EPA instructed TSI to complete a few remaining remedial investigation tasks, but halt further work while EPA expanded the investigation from six miles to seventeen miles.

2. Current actions

As described above, in 2004, EPA commenced a RI/FS of the 17-mile LPRSA, funded by the CPG under a Settlement Agreement pursuant to CERCLA Section 122(h), 42 U.S.C. § 9622(h). In May 2007, EPA entered into the RI/FS agreement with the CPG, under which the CPG agreed to complete the RI/FS for the LPRSA. The RI/FS is proceeding under the direction and oversight of EPA. Concurrently, EPA is performing a Focused Feasibility Study ("FFS") with respect to an eight-mile portion of the LPRSA and expects to select an early (interim) action for the eight-mile area when the FFS is complete.

On June 23, 2008 EPA entered into an AOC with OCC and Tierra Solutions for the removal and off-site disposal of approximately 40,000 cubic yards of contaminated sediment from within a predetermined area in the LPRSA called the Phase I work area. The same order also provided for the removal and disposal of an additional 160,000 cubic yards in a yet to be sited Confined Disposal Area (CDF). The Phase 1 Removal Action is ongoing and expected to be complete before the end of 2012. Work on Phase 2 has not started.

C. State and Local Authorities' Roles

State and local authorities' roles are described in the previous sections.

III. THREATS TO PUBLIC HEALTH, OR WELFARE, OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The conditions present at the RM 10.9 Removal Area constitute an actual or threatened "release" of a hazardous substance from a facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22), that may present an imminent and substantial endangerment pursuant to Sections 104(a)(1) and 106(a) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and 9606(a). These conditions constitute a threat to public health, welfare, or the environment. EPA has identified conditions in the surface sediment of the RM 10.9 Removal Area that correspond to factors identified in Section 300.415(b)(2) of the NCP, which indicate that a removal action is necessary. Conditions

that correspond to factors that provide a basis for a removal action under Section 300.415 (b)(2) of the NCP include:

(i) Actual or potential exposure to nearby human populations or animals or the food chain from hazardous substances or pollutants or contaminants;

High concentrations of 2,3,7,8-TCDD, PCBs, mercury, PAHs and other hazardous substances are present in the sediments of the RM 10.9 Removal Area that could adversely impact nearby human populations, animals or the food chain if released. Surface sediment in the RM 10.9 Removal Area contains 2,3,7,8-TCDD in concentrations up to 21.6 ppb, PCBs at 34 ppm, mercury at 22 ppm and total high molecular weight PAHs at 510 ppm. Exposure to these high concentrations in the surface sediment could pose significant risk to human health or the environment.

Potential human exposures to chemical contaminants include receptors such as anglers and crabbers potentially catching and consuming fish/shellfish (e.g., crabs) from this area as well as boaters and workers in the area. These exposures are primarily through ingestion of contaminated fish or shellfish from the River, dermal contact and/or incidental ingestion of sediment and/or water. Inhalation of volatile or semi-volatile organic compounds from sediment or water is another potential exposure pathway, but not as significant as the ingestion and direct contact pathways. These contaminants have been associated with a variety of adverse health effects including a significantly increased risk of cancer.

Based on the results of monitoring and research undertaken since the mid-1970s, the State of New Jersey has taken a number of steps, in the form of consumption advisories, closures, and sales bans, of fish and crabs to limit the exposure of the fish- and crab-eating public to toxic contaminants in the Lower Passaic River, Newark Bay, Hackensack River, Arthur Kill and Kill Van Kull. Recent studies by NJDEP have determined that, despite warnings currently in place, anglers and crabbers do consume their catch. The initial measures prohibited the sale, and advised against the consumption, of several species of fish and eel and were based on the presence of PCB contamination in the seafood. The discovery of widespread dioxin contamination in the Newark Bay Complex led the State of New Jersey to issue a number of fish consumption advisories in 1983 and 1984, which prohibited the sale or consumption of all fish, shellfish and crustaceans from the LPRSA. These State fish advisories and prohibitions are still in effect.

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

Sampling results from the RM 10.9 Removal Area, as well as data from other earlier sampling events within the LPRSA, show concentrations of contaminants that significantly exceed the levels that can produce toxic effects to biota. Recent studies have shown that 2,3,7,8-TCDD and PCBs bio-accumulate in fish, to levels rendering the fish unfit for human consumption, from sediment with much lower levels of 2,3,7,8-TCDD and PCBs than found in RM 10.9 Removal Area sediments.

The RM 10.9 Removal Area is located in the Hudson Raritan Estuary. Ecological receptors in the RM 10.9 Removal Area include a range of invertebrate and vertebrate organisms that inhabit or utilize the River either year round or on a migratory basis. These primarily include benthic invertebrates, shellfish (primarily blue crabs), fish, birds (both shorebirds and passerines) and mammals. Exposures for all of these groups can include both direct contact with sediment and water, as well as indirect uptake of bioaccumulative chemical constituents through food web (i.e., feeding) interactions. The interaction between the ecological receptors and high levels of 2,3,7,8-TCDD, PCBs and other contaminants in the surface sediment of the RM 10.9 Removal Area is adversely impacting the estuary.

(iv) High levels of hazardous substances or pollutants or contaminants at or near the surface that may migrate;

As previously discussed, high levels of contamination are present in the surface sediment within the RM 10.9 Removal Area. These sediments are in contact with the waters of the Passaic River, and are susceptible to erosion and scouring or other disturbances on an ongoing and continuous basis. During high-flow events, elevated shear stresses created by higher flows could lead to significant erosion, increasing the threat of further releases of hazardous substances. Analysis of recent surface sediment data shows that the average surface sediment concentrations for 2,3,7,8-TCDD, PCBs and Mercury in the RM 10.9 Removal Area are among the highest in the LPRSA.

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

The potential for significant contaminant migration from storm events and tidal action continues to be a major concern. Without a removal action to isolate the highly contaminated surface sediments in the RM 10.9 Removal Area, weather and hydrologic events will continue to erode and suspend these contaminated sediments and facilitate their migration throughout the LPRSA and Newark Bay, impacting human health and the environment.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the RM 10.9 Removal Area, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The time critical removal action is being performed to reduce exposure of receptors to, and

prevent potentially significant migration of contamination from, the RM 10.9 Removal Area. In addition to addressing these time-critical concerns, sediments removed from the RM 10.9 Removal Area will be used to conduct sediment treatment and/or decontamination bench-scale tests (Section 3, Description of alternative technologies).

Between 15,000 and 20,000 cubic yards (top two feet) of in-place contaminated sediment will be removed from the RM 10.9 Removal Area; the exact amount will be refined during the design. During the design of the removal action, the means and methods for sediment removal, including best practices to minimize the resuspension of contaminated sediment during the removal will be determined. A protective cap will be designed, constructed, monitored, and maintained over the RM 10.9 Removal Area. Operation and Maintenance (O&M) and performance monitoring of the cap will be conducted to determine whether it continues to meet performance standards, and to insure that its integrity is maintained pending the selection of a remedial action addressing the full LPRSA, which includes the RM 10.9 Removal Area. Data from the performance monitoring effort may also help inform future decisions and/or remedial designs in the LPRSA. The cap shall be constructed using suitably protective capping designs which may include the use of activated carbon layers or other materials to reduce bioavailability and migration of contamination as well as cap armoring to protect portions of the RM 10.9 Removal Area subject to higher shear stresses from potential erosion.

2. Contribution to remedial performance

The Diamond Alkali Site was placed on the NPL in 1984. As described previously, a FFS for an early action on the sediments of the lower eight miles of the River and an RI/FS for the 17-mile tidal portion of the River are underway to address the remediation of the overall LPRSA. The removal action will assist in any long-term remediation of sediment contamination in the River by removing the most highly contaminated surface sediments that are contributing contaminants to the LPRSA. This removal action will help protect public health, welfare, and the environment until a permanent remedy can be selected and implemented.

The proposed removal action at the RM 10.9 is consistent with the requirement of Section 104(a)(2) of CERCLA, 42 U.S.C. §104(a) (2) which states that "any removal action undertaken ...should, to the extent ...practicable, contribute to the efficient performance of any long term remedial action with respect to the release or threatened release concerned." Since any remedial action undertaken at the Site would benefit from the work items in this removal action, the cleanup effort is consistent with any future remedial work.

3. Description of alternative technologies

Sediment treatment/decontamination vendors have been identified who are interested in conducting bench and/or pilot-scale tests on contaminated sediment from the RM 10.9 Removal Area with the objective of advancing technologies available for the treatment of large quantities of contaminated sediments from maintenance or environmental dredging projects. Vendors will perform bench-scale testing on representative samples of sediment, to determine the overall feasibility and economics of specific treatment technologies. The bench-scale tests to determine the feasibility of proceeding to full scale pilot demonstration projects are to be conducted during

development of the work plans to conduct the removal. Should the bench-scale tests suggest that a technology is not effective or feasible, the sediments from the Removal Area will be disposed of at an appropriately permitted EPA-approved disposal facility.

If the decision is made to proceed with pilot-scale tests, the removed sediment will be transported to the pilot study vendor(s)' treatment locations. Conduct of the pilot-scale tests will not impact the implementation schedule of the removal and capping activities.

4. EE/CA

Due to the time critical nature of the proposed removal action an EE/CA was not conducted.

5. Applicable or relevant and appropriate requirements (ARARs)

Applicable or Relevant and Appropriate Requirements (ARARs) that are within the scope of this removal action will be complied with to the extent practicable, considering the exigencies of the situation. Potential federal and state ARARs for this removal action are listed below. Additional ARARs may be identified as details of the project are developed.

Federal Requirements

- Section 112 of the Clean Air Act (CAA)
- Section 401 and 404 of the Clean Water Act (CWA) – Water Quality Certification and Dredge and Fill Requirements
- Section 10 of the Rivers and Harbors Appropriations Act
- Section 7 of the Endangered Species Act
- The Fish and Wildlife Coordination Act
- Section 307 of the Federal Coastal Zone Management Act
- The Magnuson-Stevens Fishery Conservation and Management Act, as amended and reauthorized by the Sustainable Fisheries Act
- Resource Conservation and Recovery Act (RCRA) (Subtitle D) Nonhazardous Solid Waste Program and Regulations RCRA (Subtitle C) Hazardous Waste Program and Regulation
- Toxic Substances Control Act – (40 CFR Part 761, Subpart D requirements for storage and disposal of PCB wastes)
- RCRA Land Disposal Restrictions (40 CFR Part 268)

State (substantive requirements only)

- New Jersey Surface Water Quality Standards developed pursuant to the CWA, New Jersey Water Pollution Control Act and New Jersey Water Quality Planning Act
- New Jersey Soil Erosion and Sediment Control Act
- Tidelands Act (Riparian Lands Leases, Grants and Conveyances)
- Waterfront Development Law
- Flood Hazard Area Control Act
- New Jersey Solid Waste Management Act
- New Jersey Water Pollution Control Act – NJPDES Rules

- New Jersey Technical Requirements for Site Remediation

6. Project schedule

Field activities under this removal action are anticipated to begin in the spring 2013 and be completed in approximately six months.

B. Estimated Costs

The total estimated cost for the removal action is \$20,000,000. In accordance with the EPA cost-estimating guidance, the costs are intended to be estimates within a -30 to +50 percent range. It is estimated that EPA oversight costs for the removal action will be approximately \$1.5 million.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Should the response action be delayed or not taken, high levels of 2,3,7,8-TCDD, PCBs, mercury, PAHs and other contaminants present in surface sediments of the RM 10.9 Removal Area will continue to be released during weather and hydrologic events and migrate throughout the LPRSA and Newark Bay further endangering public health and the environment.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

It is currently anticipated that some or all of the CPG members will enter into an Administrative Settlement Agreement and Order on Consent (Removal AOC) to perform the removal action described in this Action Memorandum. In order to guarantee performance of the work, the Removal AOC calls for the settling parties to establish a trust account to fund the removal action, for the benefit of EPA. Should the parties default on the work, EPA will have immediate access to the monies in this account.

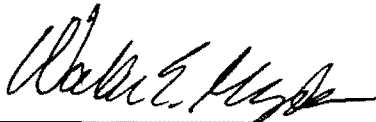
IX. RECOMMENDATION

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a removal action.

This decision document, which selects the time-critical removal action for the RM 10.9 Removal Area in Lyndhurst, New Jersey was developed in accordance with CERCLA, and is not inconsistent with the NCP. The decision documented in this Action Memorandum is based on the Administrative Record for the removal action.

The NJDEP was consulted and agrees with the selected removal action for the Site.

Please indicate your approval of the proposed response action by signing below.

Approve:  Date: May 21, 2012
Walter E. Mugdan, Director
Emergency and Remedial Response Division

Disapprove: _____ Date: _____
Walter E. Mugdan, Director
Emergency and Remedial Response Division

cc: (after approval is obtained)
J. Rotola, ERRD-RAB
B. Grealish, ERRD-RAB
R. Basso, ERRD
S. Vaughn, ERRD
D. Karlen, ORC
S. Flanagan, ORC
P. Hick, ORC
D. Kluesner, PAD
D. Pace, OPM-FMB
P. McKechnie, OIG
I. Kropp, NJDEP
T. Cozzi, NJDEP
J. Macgregor, NJDEP
A. Raddant, USDOJ
R. Mehran, NOAA
L. Baron, USACE
T. Kubiak, FWS



Figure 1

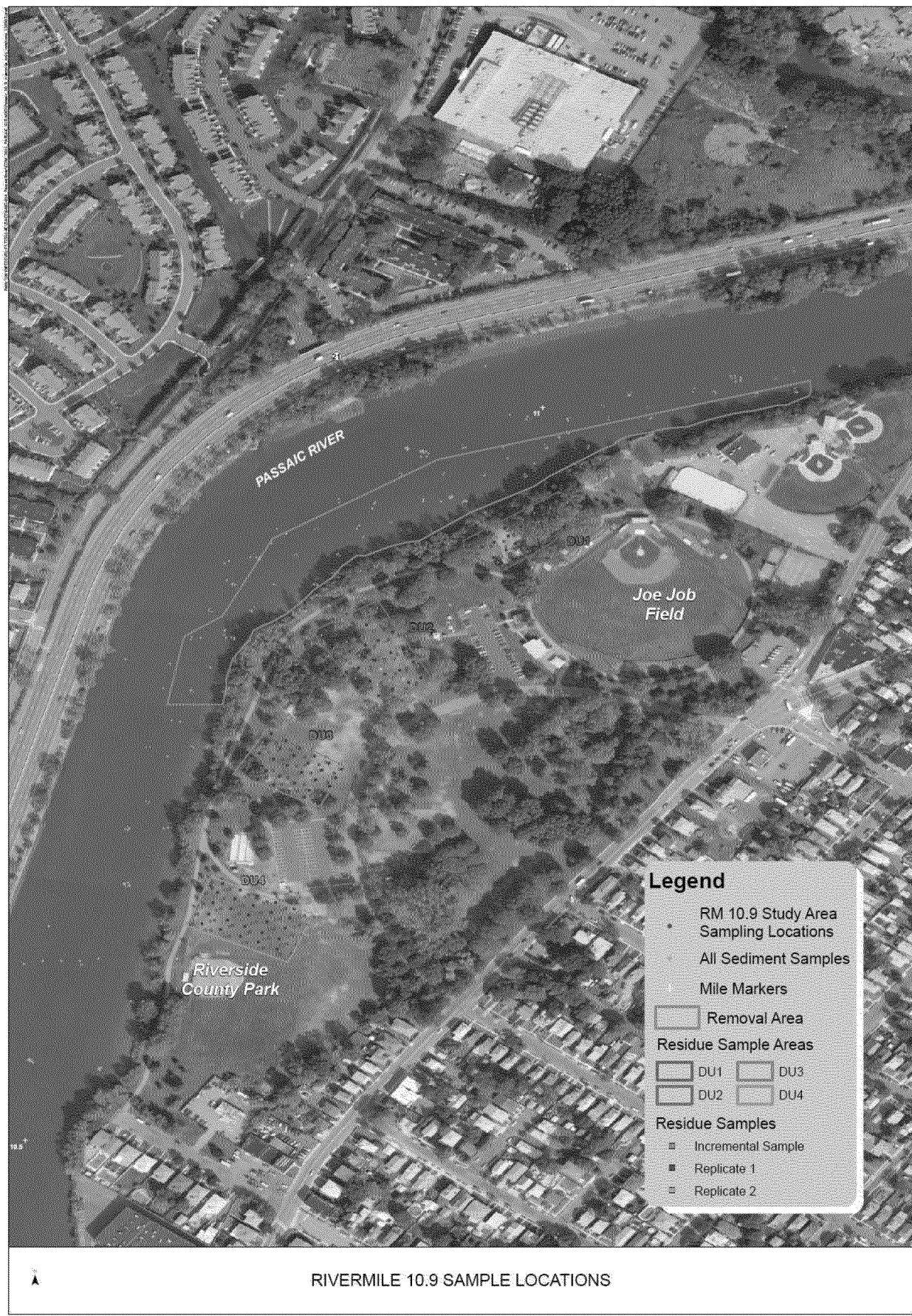
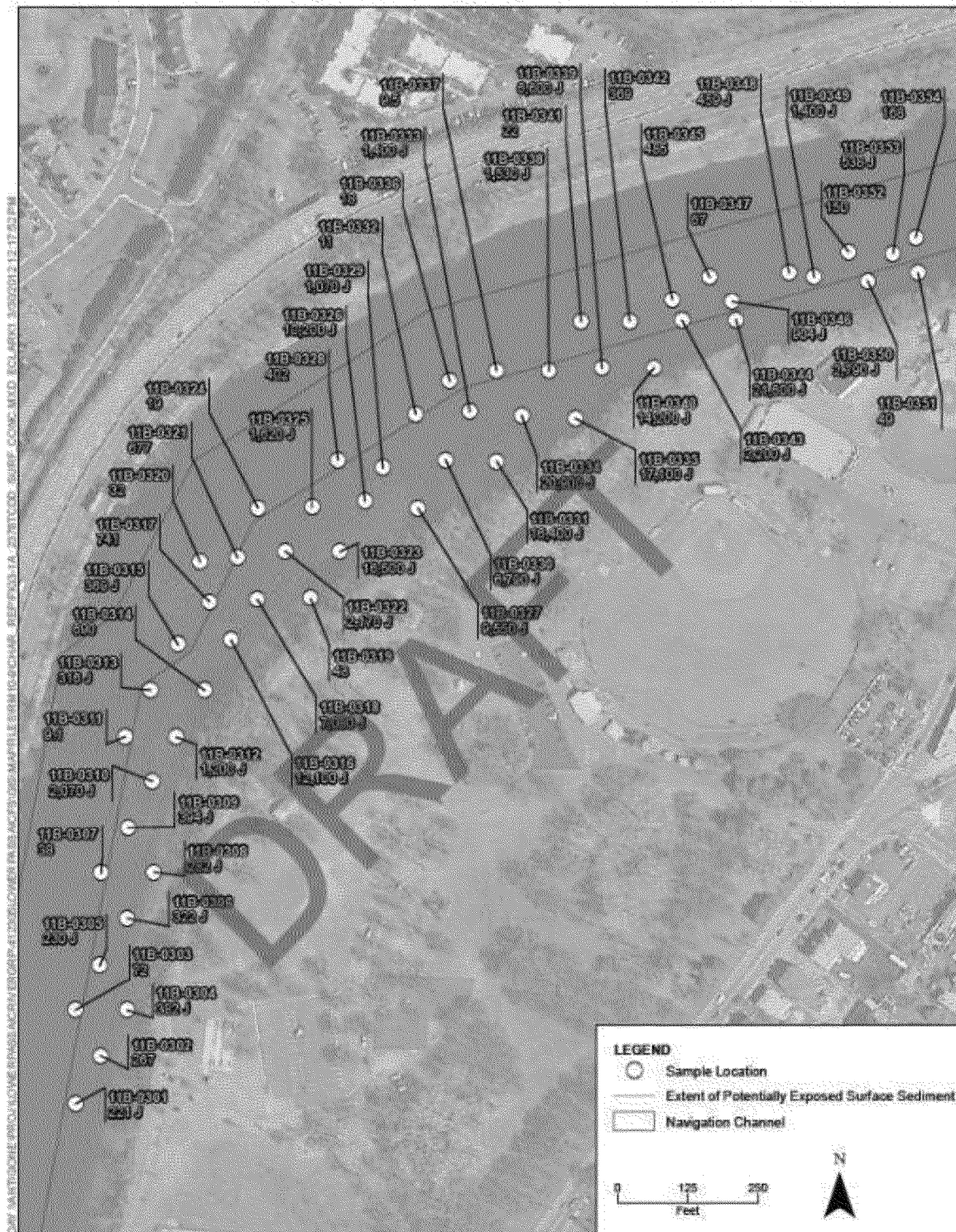


Figure 2



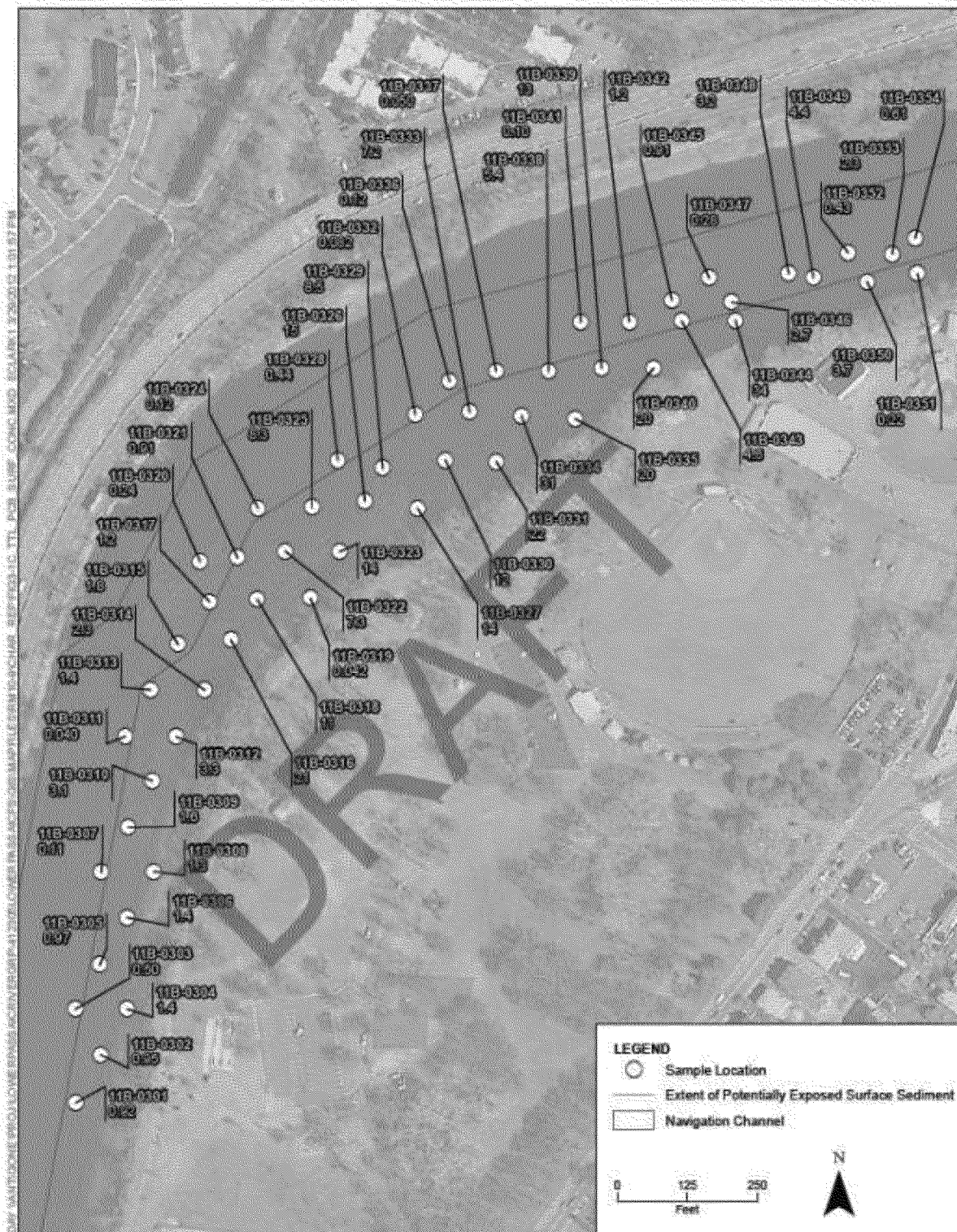
1. Orthophoto: NAGIS, 2007
2. Surficial - sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 2-5.
4. Sample locations shown are identified as 11B-03XX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (when present)
6. All values are shown in nanograms per kilogram (ng/kg)
7. TCDD - tetrachlorodibenzo-p-dioxin
8. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD25) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program.
9. J - the analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample.

AECOM

FIGURE 3-1.a
2,3,7,8-TCDD
Surficial Concentration
 RM 10.9 Characterization Program Summary
 Lower Passaic River Study Area, New Jersey

CH2MHILL

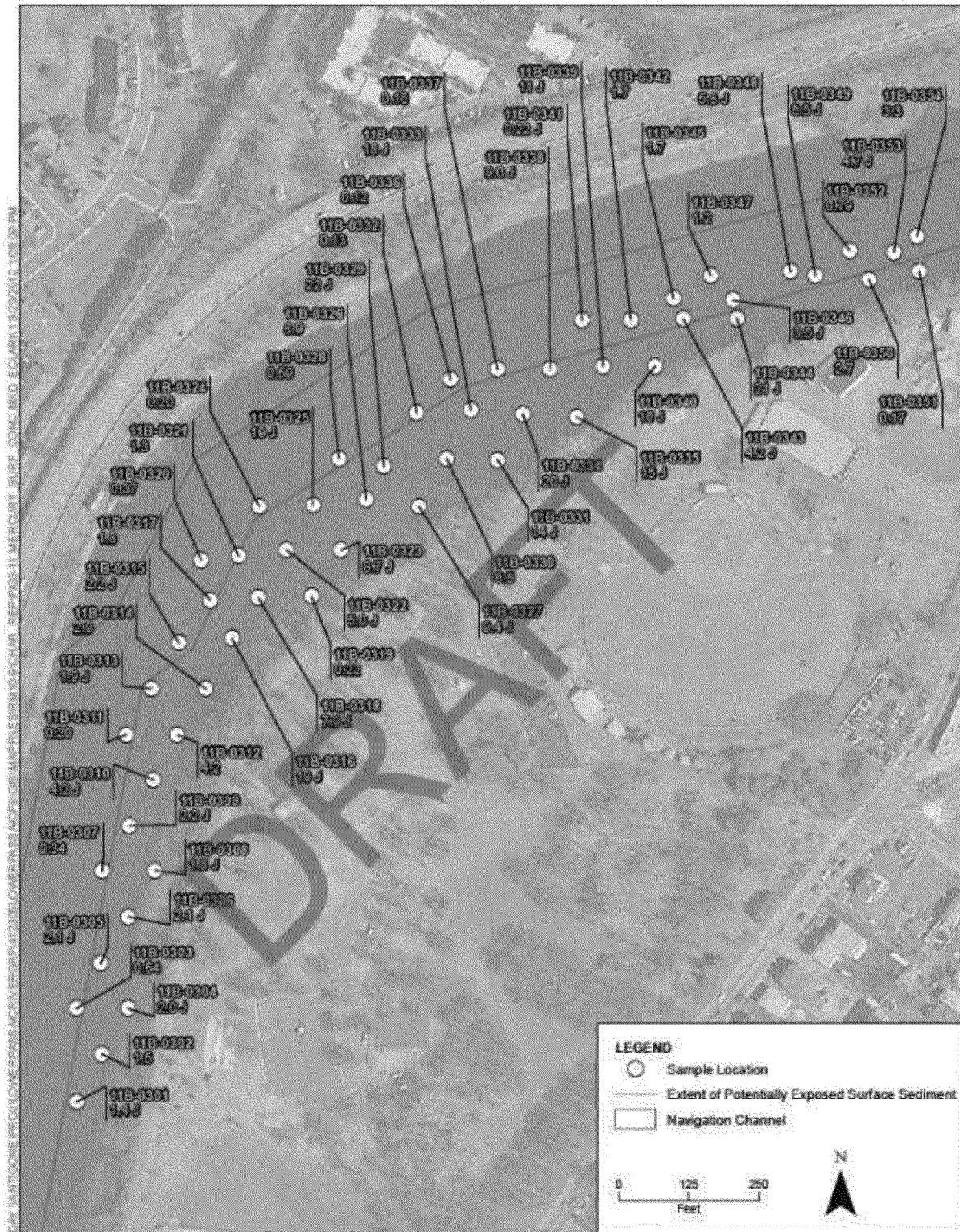
Figure 3



1. Orthophoto: NJGIS, 2007
2. Surficial = sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 2-5.
4. Sample locations shown are identified as 11B-03XX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (when present)
6. All values are shown in milligrams per kilogram (mg/kg)
7. PCB = polychlorinated biphenyl
8. Total PCB Congeners = the sum of all PCB congeners
9. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program.

FIGURE 3-1.c
Total PCB Congeners
Surficial Concentration
 RM 10.9 Characterization Program Summary
 Lower Passaic River Study Area, New Jersey
CH2MHILL.

Figure 4



1. Orthophoto: NJGIS, 2007
2. Surficial = sample collected from 0.0 - 0.5 feet below sediment surface
3. Sample locations shown in this figure are the primary core locations listed in Table 2-5.
4. Sample locations shown are identified as 11B-03XX, where XX is a code specific to each location.
5. Data below sample location presented as Result Qualifier (when present)
6. All values are shown in milligrams per kilogram (mg/kg)
7. The Extent of Potentially Exposed Surface Sediment was generated from the -2ft (NGVD29) elevation, which represents the Mean Low Water for this part of the river. The data source was the July 2011 Bathymetry Survey conducted as part of the RM 10.9 Characterization Program.
8. J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

FIGURE 3-1.1
Mercury
Surficial Concentration
 RM 10.9 Characterization Program Summary
 Lower Passaic River Study Area, New Jersey

AECOM

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Figure 5